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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/561,528

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Hiroshi Taniuchi

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EXAMINER

LEGESSE, HENOK D

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/561,528	Applicant(s) TANIUCHI ET AL.	
	Examiner HENOK LEGESSE	Art Unit 2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 26-45 is/are pending in the application.
- 4a) Of the above claim(s) 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 26, 27 and 29-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/22/2008 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claims 26- 27,29-32,34, and 36-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al. (US 2003/0068571) in view of Sansone et al. (US 4,673,303).

Uehara et al teaches:

Regarding claim 26, an image forming method (figs.3-8) comprising the steps of:

performing hydrophilic treatment (using element 18 in figs.3-6,8) for making a surface of an intermediate transfer body (16 figs.3-6,8) hydrophilic by applying energy to the surface of the intermediate transfer body (16);

applying a material (using element 20 to coat layer 8 on the surface of 16) for reducing the fluidity of ink (32) on the intermediate transfer body (16) having the surface on which the hydrophilic treatment has been performed;

forming an image by ejecting the ink (32) from an ink jet head (28) on the intermediate transfer body (16) on which the liquid has been applied; and

transferring (using transfer and fixing device portion 46) the image formed on the intermediate transfer body (16) onto to a recording medium (34).

different materials can be used by element 20 to form layer 8 on top of the intermediate transfer body 16 (see paragraphs 0052-0066).

Regarding claim 27, wherein the surface of the intermediate transfer body (16 figs.3,5,6,8) contains at least one of a fluorine compound and a silicone compound (paragraph 0102).

Regarding claim 29, wherein the hydrophilic treatment comprises plasma processing (plasma processor element 18 in figs.3-6,8. see paragraph 0203 line 2 and the text related to fig.3).

Regarding claim 30, wherein the hydrophilic treatment is additionally performed (the hydrophilic treatment of the intermediate transfer body 16 is additionally performed in the printing processes using device in fig.3 and it is also obvious to arrange plurality of element 18 in the device of fig.3 in order to get the required level of hydrophilic property).

Regarding claim 31, wherein the liquid contains a component for coagulating a colorant of the ink (paragraphs 0059, 0064, 0070,0136,0137,0154).

Regarding claim 32, wherein the component comprises metal ions (paragraphs 0059, 0064, 0070,0136,0137,0154).

Regarding claim 34, a step of promoting a removal of water (36,50 in figs.3,5,6,8) from the ink on the intermediate transfer body (16 figs.3,5,6,8) prior to transferring the image to the recording medium (34).

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Regarding claim 36, an image forming method (figs.3-8) comprising the steps of:

performing plasma processing (using plasma processor element 18 in figs.3-6,8. see paragraph 0203 line 2 and the text related to fig.3) on a surface of an intermediate transfer body (16), to make the surface hydrophilic (see fig. 3 and the related texts);

applying a material (using element 20 to coat layer 8 on the surface of 16) for reacting with an ink on the intermediate transfer body (16) having the surface on which the plasma processing has been performed;

different materials can be used by element 20 to form layer 8 on top of the intermediate transfer body 16 (see paragraphs 0052-0066).

forming an image by ejecting the ink (32) from an ink jet head (28) on the intermediate transfer body (16) on which the liquid has been applied; and

transferring (using transfer and fixing device portion 46) the image formed on the intermediate transfer body (16) on to a recording medium (34).

Regarding claim 37, an image forming method (figs.3-8 of Uehara et al) comprising the steps of:

performing plasma processing (using plasma processor element 18 in figs.3-6,8. see paragraph 0203 line 2 and the text related to fig.3) on a surface of an intermediate transfer body (16), the surface containing at least one of fluororubber and silicone rubber (paragraphs 0102), to make the surface hydrophilic (see fig. 3 and the related texts);

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applying a material (using element 20 to coat layer 8 on the surface of 16) for coagulating a colorant of ink on the intermediate transfer body (16) (see paragraphs 0059, 0064, 0070) having the surface on which the plasma processing has been performed;

different materials can be used by element 20 to form layer 8 on top of the intermediate transfer body 16 (see paragraphs 0052-0066).

forming an image by ejecting the ink (32) from an ink jet head (28) on the intermediate transfer body (16) on which the liquid has been applied; and

transferring (using transfer and fixing device portion 46) the image formed on the intermediate transfer body (16) on to a recording medium (34).

Regarding claim 38, an image forming method (figs.3-8) comprising the steps of:

applying a material (using element 20 to coat layer 8 on the surface of 16) for reducing the fluidity of ink on an intermediate transfer body (16) on which hydrophilic treatment of applying energy to the intermediate transfer (using element 18 in figs.3-6, 8) to make the intermediate transfer body (16) hydrophilic has been performed;

different materials can be used by element 20 to form layer 8 on top of the intermediate transfer body 16 (see paragraphs 0052-0066).

forming an image by ejecting the ink (32) from an ink jet head (28) on the intermediate transfer body (16) on which the liquid has been applied; and

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transferring (using transfer and fixing device portion 46) the image formed on the intermediate transfer body (16) on to a recording medium (34).

Regarding claim 39, an image forming method (figs.3-8) comprising the steps of:

applying a material (using element 20 to coat layer 8 on the surface of 16) for reacting with an ink on an intermediate transfer body (16) on which hydrophilic treatment by plasma processing has been performed (using element 18 in figs.3-6, 8);

different materials can be used by element 20 to form layer 8 on top of the intermediate transfer body 16 (see paragraphs 0052-0066).

forming an image by ejecting the ink (32) from an ink jet head (28) on the intermediate transfer body (16) on which the liquid has been applied; and

transferring (using transfer and fixing device portion 46) the image formed on the intermediate transfer body (16) on to a recording medium (34).

Regarding claim 40, wherein the surface of the intermediate transfer body (16 figs.3,5,6,8) contains at least one of fluororubber and silicone rubber (paragraph 0102).

Regarding claim 41, an image forming method (figs.3-8) comprising the steps of:

applying a material (using element 20 to coat layer 8 on the surface of 16) for reacting with ink on an intermediate transfer body (16) on which hydrophilic treatment

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by application of energy (using element 18 in figs.3-6, 8) to the intermediate transfer body (16) has been performed;

different materials can be used by element 20 to form layer 8 on top of the intermediate transfer body 16 (see paragraphs 0052-0066).

forming an image by ejecting the ink (32) from an ink jet head (28) on the intermediate transfer body (16) on which the liquid has been applied; and

transferring (using transfer and fixing device portion 46) the image formed on the intermediate transfer body (16) on to a recording medium (34).

Regarding claim 42, wherein the intermediate transfer body has a non-ink absorbing surface (the intermediate transfer body 16 has a non-ink absorbing surfaces, the ink image is absorbed by the surface of the recording medium).

Regarding claim 43, wherein the intermediate transfer body (16) has a surface with releasability (surface of 16 has releasability in order to easily release the ink image during image transfer step).

Regarding claim 44, wherein the liquid contains a component for coagulating a colorant of the ink (paragraphs 0059, 0064, 0070,0136,0137,0154).

Regarding claim 45, wherein the liquid is applied by a liquid applying roller (roller 24).

Uehara et al does not explicitly teach:

Regarding claim 26 and 38, the applied material for reducing the fluidity of the ink is liquid.

Regarding claim 36,39 and 41, the applied material for reacting with the ink is liquid.

Regarding claim 37, the applied material for coagulating a colorant of the ink is liquid.

Sansone et al teaches

Regarding claim 26 and 38, an image forming method including using fluid/liquid material (using element 138 in fig.5) for reducing the fluidity of ink on the intermediate transfer body (16) having the surface on which the hydrophilic treatment has been performed (col.8, lines 41-53, col.7 lines 19-30).

Regarding claim 36,39 and 41, an image forming method including using fluid material (using element 138 in fig.5) the applied material reacting with the ink (116) is liquid/fluid (col.8, lines 41-53, the fluid reacts with the ink to increase the viscosity of the ink).

Regarding claim 37, an image forming method including using fluid material (using element 138 in fig.5) the applied material coagulating a colorant of the ink is liquid/fluid (col.7 lines 19-30, col.8, lines 41-53, the fluid increase the viscosity of the ink i.e. coagulating the ink).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use liquid/fluid materials that interacts with the ink for reducing the fluidity of ink , i.e. coagulating the ink, on the intermediate transfer body of Uehara et al based on the teachings of Sansone et al in order to provide various liquid materials that requires the use of less energy during transfer and fixing steps as compared to non liquid materials which need more energy for instance to melt or melt and evaporate during transfer and fixing steps. Also to obtain sharper, better defined images by increasing the viscosity of the ink during printing.

5. Claims 33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uehara et al as modified by Sansone et al above and further in view of Komatsu et al. (US 6,059,407).

Uehara et al as modified by Sansone et al teaches all of the claimed limitations except for the following:

Regarding claim 33, a step of applying a wettability improving liquid for improving a wettability of the surface of the intermediate transfer body prior to applying the liquid.

Regarding claim 35, a step of cleaning the surface of the intermediate transfer body.

Komatsu et al teaches:

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Regarding claim 33, an image forming method further comprising a step of applying a wettability improving liquid (surfactant 41 in figs.1-6) for improving a wettability of the surface of the intermediate transfer body (1).

Regarding claim 35, an image forming method further comprising a step of cleaning (using 52 in fig.4) the surface of the intermediate transfer body (1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include wettability improving liquid, surfactant, application and cleaning the intermediate surface steps/device of Komatsu et al in the device of Uehara et al as modified by Sansone et al in order to improve the image transferability from the intermediate transfer body to the recording medium and to avoid contamination of the surface of the intermediate transfer body thereby improving print quality.

Pertinent Prior Arts

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure;

Jeanmaire et al. (US 6,109,746) teaches liquid application for reducing the fluidity of ink on transfer body prior to image printing (element 220 in fig.3);

Arai et al. (US 5,470,691) teaches plasma treatment, hydrophilic surface (col.11, line 58 – col.12 line 3).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENOK LEGESSE whose telephone number is (571)270-1615. The examiner can normally be reached on Mon.- Fri. Between. 8:00 AM-6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW LUU can be reached on (571)272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

H.L.
03/12/2009

/K. Feggins/
Primary Examiner, Art Unit 2861